

REMARKS/ARGUMENTS

In view of both the amendments presented above and the following discussion, the applicants submit that none of the claims now pending in the application is obvious under the provisions of 35 USC § 103. Furthermore, the applicants also submit that all of these claims now satisfy the requirements of 35 USC § 112. Thus, the applicants believe that all of these claims are now in allowable form.

If the Examiner believes that there are any unresolved issues in any of the claims now pending in the application, the Examiner is urged to telephone Arthur L. Liberman, Esq. at (732) 291-9434 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Claim Amendments

In the paragraphs numbered '4' and '5' on page 2 of the Office Action of February 23, 2005, claims 6 and 13 were objected to as containing allegedly unclear terms, e.g., '-NH' (in claim 6) and the term 'lose than' (in claim 13). The term '-NH' has been replaced by '-NH₂' in claim 6, and the phrase containing the allegedly unclear term, 'lose than' has been deleted, thereby obviating each of the claim objections of ¶¶ 4 and 5 of on page 2 of the 2/23/05 Office Action.

Rejections under 35 USC § 112

In ¶¶ 6-17 bridging pages 2-4 of the Office Action of February 23, 2005, claims 1-13 as previously presented were rejected under 35 USC 112. As a result of the newly-presented amendments to the claims including:

- (i) correcting typographical errors, e.g., changing 'the carrier bane' to ---the carrier base--- and changing 'the carrier bane' to ---the carrier base--- in claim 1;
- (ii) deleting the terms 'relatively slight thickness' and 'relatively flat' in claim 8;
- (iii) limiting claim 8 to a polymerized adhesive layer of a 'thickness of at the most a few atoms'; and
- (iv) deleting such terms as 'such as', 'particularly low' and 'preferably' from claims 3, 4, 8, 11 and 13 and incorporating the subject matter which these terms modify into newly-presented claims 22-29 which newly-presented claims contain more definitive language which has proper antecedent basis in the specification of the above-identified application;

it is respectfully submitted that the rejections of the claims based on 35 USC §112 have been overcome.

It is respectfully urged that one having ordinary skill in the art would fully understand the language: "a surface roughness of the order of atomic roughness" in the context of applicant's invention and, accordingly such

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terminology (to which claim 11 is now limited) is not rejectable under 35 USC § 112.

Rejections under 35 USC § 103

In ¶¶ 18-27, bridging pages 4-7 of the Office Action of February 23, 2005, (a) claims 1-10 and 12 were rejected as being unpatentable over Armstrong et al (U.S. Patent 4,233,396) in view of Sutton (U.S. Patent 5,262,297) and (b) claim 13 was rejected as being unpatentable over Armstrong et al in view of Sutton, taken further in view of Oldenburg, U.S. Patent 6,027,695.

It is respectfully noted that no art was applied to claim 11.

It is respectfully submitted that the rejections of the claims 1-10, 12 and 13 (and, as a result of the instant amendment, additionally newly-presented claims 22-29) based on 35 USC §103(a) are (a) in error and/or (b) have been obviated as a result of the newly-presented amendments.

According to the Examiner, Armstrong et al allegedly teaches all elements of claim 1 except for reducing the surface roughness of the carrier surface. Moreover, Sutton et al allegedly teaches the introduction of NH₂ groups into the carrier surface, which would inherently reduce the surface roughness.

Applicant respectfully disagrees with the immediately aforementioned two statements set forth by the

Examiner in charge of the above-identified application for reasons set forth infra.

a. Armstrong et al

A skilled person in the art who desires to improve a carrier for (bio)chemical research would not consider the teaching of Armstrong et al because Armstrong et al relates to a field totally distinct from the field of applicant's invention and, further, because various elements of claim 1 are not disclosed in the Armstrong et al reference.

Specifically, the Armstrong et al reference is concerned with the preparation of shaped articles. It is clear that such shaped articles are not suitable for use in chemical and biochemical research. Therefore, Armstrong et al does not disclose a method for manufacturing a preparation carrier suitable for use in chemical and biochemical research.

Moreover, the Armstrong et al reference teaches the use of a photopolymerisable liquid in order to generate a shaped article, whereas the present invention teaches the unexpected and unobvious improvement of the characteristics of a solid carrier. It is apparent that the method of Armstrong clearly has a purpose different in kind (rather than degree) from the purpose of applicant's invention.

In view of these aforementioned differences between applicant's claimed invention as defined in claims 1-10 and 12 vis à vis the prior art, a skilled person intending to improve a solid carrier for (bio)chemical

research would not consider Armstrong et al as a 'starting point'.

b. Sutton et al

Assuming arguendo that the Armstrong et al reference is taken as a 'starting point', a combination of Armstrong et al and Sutton et al does not result in an explicit or implicit teaching of the method of the present invention.

Sutton et al does not teach the introduction of NH₂ groups into the carrier surface. Column 24, lines 44-65 and column 29, lines 50-58 of Sutton et al teach that the oligonucleotides are provided with an amino linker --- not the carrier. The polymeric particles are not provided with NH₂ groups. Hence, instead of introducing NH₂ groups into the carrier surface, the biomolecules (oligonucleotides) to be tested are provided with an amino linker in the Sutton et al reference. Sutton et al thus does not teach to the introduction of NH₂ groups into a carrier surface.

In conclusion, a combination of Armstrong et al and Sutton et al does not logically disclose the method of the present invention, because nowhere in either reference is it stated or suggested that a carrier surface for biochemical research should be treated thermally and/or chemically such that the surface roughness is reduced.

In summary, no motivation exists to combine the Armstrong et al reference with the Sutton et al reference.

c. Oldenburg et al

In view of the lack applicability of the Armstrong et al and Sutton references, to claims 1-10 and 12 as argued supra, it is respectfully urged that the Oldenburg et al reference does not provide any support to Armstrong et al and Sutton et al for rejection of claim 13. The Oldenburg et al reference teaches apparatus for holding liquid such as a microtiter plate in which a plurality of wells (each of which can be $\leq 0.5 \mu\text{l}$.) are formed. However, no logically-founded motivation exists to apply the teachings of Oldenburg et al to the combination of the Sutton et al and Armstrong et al references and then apply the resulting combination to the field of applicant's invention.

In support of the foregoing arguments are the holdings in:

- In re Oetiker, 24 USPQ 2d1443 (Fed. Cir. 1992) and
- In re Zurko, 527 U.S. 150, 50 USPQ 2d1930 (1999).

Conclusion

In view of both the amendments presented above and the foregoing discussion, Applicant submits that each of the rejections of the claims has been obviated.

Consequently, the Applicants believe that all these claims are presently in condition for allowance.

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Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

Respectfully submitted,

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